A.D. 1868, 30th DECEMBER. N° 3973.

SPECIFICATION

OF

HENRY HEATHER BIGG.

ARTIFICIAL LEGS.

LONDON:
PRINTED BY GEORGE E. EYRE AND WILLIAM SPOTTISWOODE,
PRINTERS TO THE QUEEN'S MOST EXCELLENT MAJESTY:
PUBLISHED AT THE GREAT SEAL PATENT OFFICE,
25, SOUTHAMPTON BUILDINGS, HOLBORN.
Price 4d.
1869.

A.D. 1868, 30*th* DECEMBER. N° 3973.

Artificial Legs.

(*This Invention received Provisional Protection only.*)

PROVISIONAL SPECIFICATION left by Henry Heather Bigg at the Office of the Commissioners of Patents, with his Petition, on the 30th December 1868.

I, HENRY HEATHER BIGG, of Wimpole Street, Cavendish Square, in the County of Middlesex, Anatomical Mechanician, do hereby declare the nature of the said Invention for "IMPROVEMENTS IN THE CONSTRUCTION OF ARTIFICIAL LEGS," to be as follows :—

The distinguishing features of this Invention are,—

1st. The construction of the ankle joint and the mode of connecting the foot to the lower part of the leg. My improved mode of constructing the ankle joint admits both of antero posterior and lateral or horizontal motion.

2nd. The means of constructing, attaching, and moving the knee joint.

The ankle joint consists of two distinct parts made of wood, vulcanite, bone, or any other suitable material. The lower part, which forms the foot, has a cup-like hollow or socket with two notches provided with blocks of india-rubber one on either side. A hole or aperture is made through the centre of the cup for the passage of an elastic cord or

tendon. The other or upper portion or ankle part consists of a block of wood or other material with a hollow cup or socket made therein, into which is fitted a spherical block or ball of any suitable hard material. This spherical block or ball has a hole made through its centre for the passage of a strong cord of catgut, chain, twisted thread, or other tough material which acts as a tendon. The spherical block or ball is provided with two lateral half round pins, which form the ankle joint by fitting into corresponding notches at the lower part of the leg. The flat part of these pins rests on the india-rubber blocks at the side of the cup or socket of the foot. The pins rock horizontally on these blocks and thus form a pivot or pin joint, thus permitting of antero posterior and lateral movement combined. Just behind the cup is a circular or oval aperture for the passage of a catgut cord, which is surrounded by a spiral or helical spring formed of metal wire, and which when jointed to the foot gives an uplifting motion to the whole of the foot and presses the heel downwards. The two parts of the foot are joined together by two cords or tendons, one passing through the centre of the spherical block or ball and having at its upper part an india-rubber collar and vulcanite screw fixed to the woodwork of the leg to give both tension and elasticity to the joint and keep it close to its work, and which also fastens to the under surface of the foot by a horizontal peg or staple. The other cord is firmly fixed to the under surface of the heel and is secured to the woodwork forming the calf of the leg. Around this heel cord is placed a helical wire spring for giving motion to the ankle joint. The base of the foot is covered with india-rubber to deaden sound and impart elasticity to the tread.

The knee joint consists of two blocks of wood joined together by a metal rod or bolt, and motion is given to it by a catgut, wire, or other tough cord passing over it and secured at the lower end by an india-rubber cord to the leg part, the upper part of the cord being firmly fixed to the woodwork of the thigh. The effect of this cord is to throw the leg forward or straighten it when flexed. The whole leg is covered with a delicate skin and enamel similar in color to the human flesh, and it can be washed when needed.

LONDON:
Printed by GEORGE EDWARD EYRE and WILLIAM SPOTTISWOODE,
Printers to the Queen's most Excellent Majesty. 1869.